**Methods 2 Revision: Number**

*There are 2 parts to each question. If you get help with the first part, try to do the second part on your own.*

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 1. If you share out £240 between Alice and Bill in the ratio 5 : 3, how much more does Alice get compared with Bill? 2. If you share out £60 between Alice and Bill in the ratio 2 : 3, how much does each of them get? | | 4 |
| 2 | 1. Change the following fractions to decimals. 2. 4/5 (ii) 3/8   (b) Change the following fractions to decimals.  (i) 6/10 (ii) 5/8 | | 4 |
| 3 | 1. Prove that the recurring decimal 2. Prove that the recurring decimal | | 6 |
| 4 | (a)   1. 34% of £28.76 = 2. 76% of 900 = 3. Reduce £45.50 by 12.5%   (b)   1. 29% of £235.60 = 2. 43% of 2400 = 3. c) Reduce £260 by 30% | | 12 |
| 5 | (A)  a) Change the following to percentages. Give your answers to 1 decimal place.  (i) 17 out of 67  (ii) 134 out of 386  b) If Sue scores 82 marks out of a possible 120 marks, what was her score as a percentage?  (B)  a) Change the following to percentages. Give your answers to 1 decimal place.  (i) 44 out of 78  (ii) 12.6 out of 59  b) If Sue scores 14 marks out of a possible 75 marks, what was her score as a percentage? | | 12 |
| 6 | (a)  i) John places £13000 in a bank which pays 4.6% compound interest per year. How much interest does he earn if he leaves the money in the bank for 3 years?  ii) Sue buys a new car for £8700. Its annual rate of depreciation is 23% per year. How much is it worth after 5 years?  (b)  i) Sarah buys a 5-year bond which pays compound interest of 5.8% per year. She buys the bond for £8000. How much can she cash the bond in for at the end of the 5 year period?  ii) Tom buys a house for £145000. It will depreciate at the rate of 2.3% per year for the next three years. How much will it then be worth? | | 8 |
| 7 | (a)  (i) In a sale, all the prices have been reduced by 15%. The sale price of a shirt is £14.45  What was the pre-sale price of the shirt?  (ii) The price of a computer is £799. This price includes VAT which is 17.5%.  What is the cost of the computer before VAT is added?  (b)  (i) A bank pays interest of 6.8% per year. Emma places some money in the bank and, one year later, after the interest has been paid, she has £2242.80 in her account.  How much did she put in the bank?  (ii) After a reduction of 12.5%, Sam pays £3937.50 for a car.  How much was the car before the reduction? | | 8 |
| 8 | 1. In September 2007, Jim weighed 85.0kg.   In September 2008, he weighed 86.7kg.  What was his percentage increase in weight?   1. The price of a car decreases from £7600 to £5168 in one year.   What is the percentage depreciation in this year? | | 4 |
| 9 | 1. *q* is inversely proportional to the square of *t*.   When *t* = 5, *q* = 9.6   * 1. Find a formula for *q* in terms of *t*.   2. Calculate the value of *q* when *t* = 8.   3. When *q* = 2.4, calculate the value of *t*.  1. The distance *d* through which a body falls from rest is proportional to the square of the time taken, *t*.   The body falls 45m in 3 seconds.   * 1. Find a formula for *d* in terms of *t*.   2. How far will the body fall in 6 seconds?   iii) How long will the body take to fall 20m? | | 6 |
| 10 | 1. The maximum load a van can safely carry is 1800kg. Fred transports metal bars in the van. Each bar weighs 90kg. Fred knows that the 1800 is rounded correct to 2 significant figures and 90 is rounded correct to 1 significant figure.   Calculate the greatest number of bars that Fred can safely carry in the van. Show all workings. | | 4 |
|  | 1. All measurements are rounded correct to 1 decimal place. 2. Find the largest possible value of the shaded area.   (ii) Find the least possible value of the shaded area. |  | 4 |
| 11 | 1. Sara and Fred share tips from their job in the ratio 2 : 5. If Fred receives £35 how much does Sara get? 2. Sara and Fred share tips from their job in the ratio 3 : 4. If Sara receives £18 how much does Fred get? | | 4 |
| 12 | 1. Change the recurring decimal  into a fraction in its simplest form. 2. Change the recurring decimal  into a fraction in its simplest form. | | 6 |